



# REFORMED CHURCH UNIVERSITY

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## FACULTY OF EDUCATION AND SOCIAL SCIENCES

BACHELOR OF EDUCATION HONOURS DEGREE IN INFORMATION TECHNOLOGY

### IT PROJECT MANAGEMENT

HICT 219

Part 2 Semester 2 Examination

Total Marks [100]

Date: October 2024

Time: 3 Hours

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### INSTRUCTIONS

1. This paper has *six (6)* questions
2. Answer any *four (4)* questions
3. Each question carries *25 marks*
4. Start each question on a new page

1. A small software house is contracted to develop an Android app for a national environmental charity. The app records surveys of wildlife and updates a cloud database. The database is accessible to PC users via a web browser. An outline list of activities has been identified:

	Activity	Weeks
A	Create detailed requirements specification.	4
B	Design database	2
C	Develop and test cloud database.	3
D	Develop Web interface.	2
E	Develop Android SQLite database and synchronise with cloud.	3
F	Design and develop Android survey interface and user test.	5
G	Develop app functionality.	4
H	Unit test app/website.	3
I	Integration test.	3

Tasks B and F are all dependent on Task A.

Task C is dependent on Task B.

Tasks D and E are dependent on Task C.

Task G is dependent only on Task E.

Task H is dependent on Tasks D, F, and G.

Task I cannot start until Task H is completed.

a) A Gantt chart will be useful in this project. Explain the purpose of a Gantt chart and describe its components. (6 marks)

b) Draw a Gantt chart for the project activities identified above. Make sure you provide a key to indicate your use of shading, arrows and any other annotation. (8 marks)

c) Explain what is meant by the term 'free float' and illustrate your answer with examples from part b). (3 marks)

d) Estimation of effort and elapsed time for an activity are essential parts of project planning. Discuss the meaning of top-down and bottom-up approaches to estimation, using examples to clearly distinguish between them. (4 marks)

e) Resource allocation is also a key activity in project planning. Using an example from the project outlined above, discuss ONE potential resource allocation issue that may arise. Identify TWO ways that can be it could be overcome, explaining how your suggestions impact the project plan. (4 marks)

2. a) Explain the purpose of establishing a business case for a new project. (5 marks)

b) i) Explain how project objectives are used in measuring project success. (4 marks)

ii) Describe THREE properties of a well-defined project objective. (4 marks)

c) You have been tasked by senior management to manage the upgrade of functionality to a business package. You have a choice of buying additional functionality from an external supplier or building it in-house.

i) Describe FOUR advantages in buying additional functionality from a supplier. (6 marks)

ii) Describe FOUR disadvantages in buying additional functionality from a supplier. (6 marks)

3. a) Describe FOUR methods that can be used to obtain skilled IT development staff and state ONE possible disadvantage in using each of these methods. (12 marks)

b) Explain the structure and role of an IT project board. (8 marks)

c) Explain how a communication plan can be used to identify appropriate ways of communicating with project stakeholders. (5 marks)

4. a) Describe FIVE levels of process maturity defined in the capability maturity model (CMM). (10 marks)

b) i) Explain the purpose of the ISO90001:2015 quality management system. (6 marks)

ii) Outline the basic principles upon which ISO9001:2015 is based. (9 marks)

5. A clothes retailer which previously relied on high street stores has decided to close most of its stores and switch to online sales.

Previously their website was used for marketing rather than e-commerce, so their online platform needs a complete redevelopment.

The company has appointed the cheapest tender for the new site development and has set a very aggressive completion date.

a) Explain the difference between project and business risk. Give TWO examples of the project risks and TWO of the business risks that might affect the project described above. (6 marks)

b) List and explain briefly FIVE different methods of managing a risk. (10 marks)

c) Explain what is meant by a risk register and state its purpose. Describe the usual contents of the register. (5 marks)

d) Create a risk register for TWO of the risks that you identified in part a). (4 marks)

6 a) Discuss why reports are needed during the execution of a project. Describe THREE types of reporting, identifying clearly who produces the report and who receives it. (10 marks)

b) If a report shows the project will significantly exceed budget, explain who has the responsibility to take action to control the over-

spend and identify **THREE** typical mitigation responses. Give reasons for your answer. (6 marks)

c) Explain in detail what is meant by Earned Value Analysis (EVA).

Use an example diagram to illustrate your answer. (9 marks)

**END OF PAPER**